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**BOEING REALTY CORPORATION  
FORMER C-6 FACILITY  
LOS ANGELES, CALIFORNIA**

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**TECHNICAL MEMORANDUM  
Quarterly Report No. 1  
Fourth Quarter 2001  
Extended Soil Vapor Extraction Pilot Testing**

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**To: Mr. Brian Mossman  
Boeing Realty Corporation  
3855 Lakewood Blvd.  
Building 1A MC D001-0097  
Long Beach, CA 90846**

**From: Haley & Aldrich, Inc.**

**Date: January 30, 2002**

**Re: Quarterly Report No. 1, Fourth Quarter 2001, Extended Soil Vapor Extraction Pilot Testing, Boeing Realty Corporation, Former C-6 Facility – Parcel C, Los Angeles, California**

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Haley & Aldrich, Inc. has prepared this report to summarize extended soil vapor extraction (SVE) pilot test activities conducted at the former Boeing C-6 Facility (subject property), in Los Angeles, California. During the period of September 11, 2001 through January 3, 2002, extended pilot tests were operated in one or both of the following areas:

- Former Building 1/36
- Former Building 2

This memorandum summarizes system operations, field measurements, vapor sampling and analysis, mass removal, and planned future SVE operations.

**BACKGROUND**

Laboratory results for soil samples collected in the Building 1/36 and Building 2 areas indicated the presence of volatile organic compounds (VOCs) at depth requiring remediation to prevent possible impact to groundwater. Based on the results of the investigation, shallow occurrences of impacted soil (less than 12 feet below ground surface) were excavated and disposed of at an approved facility. SVE was recommended for the remediation of deep impacted soil. Haley & Aldrich was contracted by BRC to install and operate two extended SVE pilot tests to obtain data for the evaluation of using SVE as a full-scale remedy. Workplans for the pilot test activities in the Building 1/36 and Building 2 areas were submitted and approved by the Regional Water Quality Control Board, Los Angeles Region (LARWQCB) in May and September, 2001, respectively.

Boeing Realty Corporation  
3760 Kilroy Airport Way, Suite 500  
Long Beach, CA 90806  
Telephone: 562-627-4900  
FAX: 562-627-4906

30 January 2002  
C6-BRC-T-02-002

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
Los Angeles Region  
320 W. 4<sup>th</sup> Street, Suite 200  
Los Angeles, CA 90013



Attention: John Geroch

Subject: **QUARTERLY REPORT NO. 1, FOURTH QUARTER 2001,  
EXTENDED SOIL VAPOR EXTRACTION PILOT TESTING FOR  
BOEING REALTY CORPORATION, FORMER C-6 FACILITY,  
19503 SOUTH NORMANDIE AVENUE, LOS ANGELES, CA**

Dear Mr. Geroch:

Please find enclosed for your review, a copy of the subject document prepared by  
Haley & Aldrich for Boeing Realty Corporation.

If you have any questions concerning this document, please contact the undersigned  
at 562-593-8623.

Sincerely,

A handwritten signature in black ink, appearing to read "Stephanie Sibbett".

Stephanie Sibbett  
Boeing Realty Corporation

Cc: Mario Stavale, Boeing Realty Corporation

enclosure

Water Quality Control Board, Los Angeles Region (LARWQCB) in May and September, 2001, respectively.

### **BUILDING 1/36**

The Building 1/36 extended pilot test system consisted of six 2-inch diameter, dual-completion, SVE wells, a trailer-mounted, 250-standard cubic feet per minute (scfm) blower system, two 8,000-lb granular activated carbon (GAC) vapor control vessels (primary and secondary), and associated piping. Haley & Aldrich installed the initial pilot test wells in June 2001 and began system operation on July 2, 2001. The location of the Building 1/36 pilot test is shown in Figure 1. The well field layout, including well screen depths is shown on Figure 2.

The initial dual-completion pilot test wells (designated VEW-1 through VEW-6) were screened from approximately 15 feet to 35 feet below ground surface (bgs) (labeled "A") and 50 feet to 65 feet bgs (labeled "B"). Two soil-vapor probe clusters (P-1 and P-2), installed previously by Montgomery Watson, were also used to obtain vacuum readings for radius of influence calculations during the Building 1/36 SVE pilot test. The initial six dual-completion SVE wells were removed in October 2001 to permit site grading and soil compaction in the area. Replacement well 1-VEW-24, constructed of two 3-inch diameter PVC casings, screened from 16 to 36 feet bgs and from 46 to 71 feet bgs, was installed on November 29, 2001 to continue pilot testing in the Building 1/36 area. Well screens were adjusted deeper due to an increase in site elevation due to grading. The system was restarted on December 13, 2001 and shut down the following week due to primary GAC bed breakthrough. U.S. Filter changed the carbon on December 28, 2001 and the system was restarted. Final field measurements for the year were taken on January 3, 2002.

### **FOURTH QUARTER 2001 SVE OPERATION SUMMARY**

Days of Operations	28
Available Days of Operation	34
Operational Time (%)	82
Mass Removed during Period (lbs)	826
Cumulative Mass Removed (lbs)	2,032

### **OPERATION**

Operational data and VOC mass removal for the extended SVE pilot test system are tabulated and shown graphically in Attachment 1. The system operation timeline for the period is as follows:

- September 11, 2001                      System re-started after GAC changeout
- October 1, 2001                        System shut down for site grading and well replacement
- December 13, 2001                    System re-started
- December 20, 2001                    System shut down for GAC changeout
- December 28, 2001                    System re-started

Total days of operation for this period was approximately 28 with intermittent downtime due to GAC changeout, well removal and reinstallation, and site grading. This equates to an up-time of approximately 82 percent when compared with the days available for operation as shown in Attachment 1.

During the period from September 11, 2001 to January 3, 2002, VOC vapors were drawn individually from wells VEW-2A, 2B, 3A, 3B, 4A, 4B, 5A, 5B, 6A, 6B and 24B with valves 100 percent open at the wellheads. The diluted process flowrates ranged from approximately 32 to 200 scfm. Inlet vacuums ranged from 47 to

77 inches of water column (inches H<sub>2</sub>O).

For this reporting period, approximately 826 lbs. of VOCs were extracted from the SVE wells and treated with GAC during 674 hours of operation. Since July 2, 2001 approximately 2,032 lbs. of VOCs have been extracted during approximately 1,625 hours of operation. Operation of the extended SVE pilot test system is in compliance with the multiple-locations permit from the South Coast Air Quality Management District (SCAQMD).

## FIELD MEASUREMENTS

VOC concentrations were measured with a photo-ionization detector (PID), calibrated to 100 parts per million by volume (ppmv) isobutylene, with readings converted to hexane equivalents, at the undiluted inlet, diluted inlet, between the GAC vessels, and at the exhaust stack. Flowrates were measured with a hand-held TSI Veloci-clac Plus hot-wire anemometer or by measuring the pressure differential across an orifice plate. Additional measurements were collected during operation including vacuum readings at each extraction well and vapor probe, pressures at the GAC vessels, and blower exhaust temperature. The field measurements are summarized in Attachment 1.

## VAPOR SAMPLING AND ANALYSIS

For this period, seven pairs of vapor samples were collected in Tedlar bags from the diluted process air stream (inlet to primary GAC vessel and exhaust from the secondary GAC vessel) and delivered to a state-certified laboratory for analysis. These samples were collected for SCAQMD permit compliance as well as system performance evaluation. The vapor samples were collected using a Tedlar bag in a vacuum case. Laboratory analyses were conducted on vapor grab samples using EPA Method 8260B/TO-14A. The full results of the vapor sampling are summarized in Attachment 1.

Based on the results of the laboratory analysis of vapor grab samples, maximum diluted inlet VOC concentrations as parts per billion by volume (ppbv) for the period are as follows:

• Toluene	1,200,000 ppbv
• 1,1,1 Trichloroethane (1,1,1 TCA)	310,000 ppbv
• 1,1 Dichloroethene (1,1 DCE)	260,000 ppbv
• Trichloroethene (TCE)	100,000 ppbv
• Xylene	78,000 ppbv
• Methylene chloride	35,000 ppbv
• 1,1 Dichloroethane (1,1 DCA)	14,000 ppbv
• 2-Butanone (MEK)	9,200 ppbv
• Cis-1,2 Dichloroethene (Cis-1,2 DCE)	7,500 ppbv

Reported influent concentrations varied during the period due to the effects of different operational configurations used during pilot testing. All exhaust sample analyses reported VOC concentrations within the permit limitations.

## ACTIVITIES FOR NEXT QUARTER

The extended SVE pilot test will continue operation on well 1-VEW-24A and B, with GAC changeouts as necessary. A full-scale SVE system is being designed for the Building 1/36 area and includes 43 single and

dual completion wells designated 1-VEW-1 through 1-VEW-26. Implementation of the full-scale SVE system will be in accordance with the *Interim Actin Soil Vapor Extraction Workplan*, by Haley & Aldrich, submitted to the LARWQCB in October 2001. The full-scale SVE system will be permitted through the SCAQMD.

Full-scale SVE equipment will be fabricated and well heads and field piping will be installed in January 2002.

It is anticipated that the Building 1/36 full-scale SVE system will be installed in January 2002 with startup occurring in February 2002.

A First Quarter 2002 report summarizing activities during the period January 2002 through March 2002 will be prepared and submitted to BRC.

## **BUILDING 2**

The Building 2 extended pilot test system consists of fifteen 2-inch diameter, PVC, single and dual-completion SVE wells, a trailer-mounted, 800-actual cubic feet per minute (acfm) blower system, two 3,000-lb GAC vapor control vessels (primary and secondary), and associated piping. Haley & Aldrich installed the initial pilot test wells in September 2001 and began system operation on November 27, 2001. The location of the Building 2 pilot test is shown in Figure 1. The well field layout, including well screen depths is shown on Figure 3.

## **FOURTH QUARTER 2001 SVE OPERATION SUMMARY**

Days of Operations	31
Available Days of Operation	34
Operational Time (%)	91
Mass Removed during Period (lbs)	412
Cumulative Mass Removed (lbs)	412

## **OPERATION**

Operational data and VOC mass removal for the extended SVE pilot test system are tabulated and shown graphically in Attachment 2. The system operation timeline for the period is as follows:

- November 27, 2001                      System start-up
- December 28, 2001                      System shut down for GAC changeout
- December 28, 2001                      System re-started

Total days of operation for this period was approximately 31 with intermittent downtime due to GAC changeout. This equates to an up-time of approximately 91 percent when compared with the days available for operation as shown in Attachment 2.

During the period, VOC vapors were drawn from wells VEW-3B, 4, 7A, 7B, 8B, 9, 10A, 11B, and 14B with valves 100 percent open at the wellheads. Individual SVE well flow rates ranged from 8 to 95 scfm for a total from the well field of 55 to 400 scfm. The diluted process flowrates ranged from 725 to 795 scfm. Inlet vacuums ranged from 28 to 39 inches H<sub>2</sub>O.

For this reporting period, and to-date, approximately 412 lbs. of non-methane VOCs (as hexane) were extracted from the SVE wells and treated with GAC during 808 hours of operation. Operation of the extended

SVE pilot test system is in compliance with the multiple-locations permit from the SCAQMD.

## **FIELD MEASUREMENTS**

VOC concentrations were measured with a PID, calibrated to 100 ppmv hexane, as per the SCAQMD permit requirements, at the undiluted inlet, diluted inlet, between the GAC vessels, and at the exhaust stack. Flowrates were measured with a hand-held TSI Veloci-clac Plus hot-wire anemometer or by measuring the

pressure differential across an orifice plate. Additional measurements were collected during operation including vacuum readings at each extraction well, pressures at the GAC vessels, and blower exhaust temperature. The field measurements are summarized in Attachment 2.

## **VAPOR SAMPLING AND ANALYSIS**

For this period, seven pairs of vapor samples were collected in Tedlar bags from the diluted process air stream (inlet to primary GAC vessel and exhaust from the secondary GAC vessel) and delivered to a state-certified laboratory for analysis. These samples were collected for SCAQMD permit compliance as well as system performance evaluation. The vapor samples were collected using a Tedlar bag in a vacuum case. Laboratory analyses were conducted on vapor grab samples using EPA Method 8260B/TO-14A. The full results of the vapor sampling are summarized in Attachment 2.

Based on the results of the laboratory analysis of vapor grab samples, maximum diluted inlet VOC concentrations as ppbv for the period are as follows:

- |                                |             |
|--------------------------------|-------------|
| • Trichloroethene (TCE)        | 21,000 ppbv |
| • 1,1 Dichloroethene (1,1 DCE) | 1,600 ppbv  |
| • Trichloroethane (1,1,1 TCA)  | 280 ppbv    |
| • Tetrachloroethene (PCE)      | 260 ppbv    |
| • Trichlorofluoromethane       | 64 ppbv     |

Reported influent concentrations varied during the period due to the effects of different operational configurations used during pilot testing. All exhaust sample analyses reported VOC concentrations within the permit limitations.


## **ACTIVITIES FOR NEXT QUARTER**

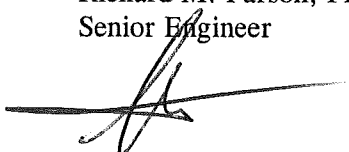
The extended SVE pilot test will continue operation on SVE wells selected to maximize mass removal. GAC changeouts will be conducted as necessary. A sound-reduction enclosure will be fabricated for the blower and motor housings, and installed in January 2002.

A First Quarter 2002 report summarizing activities during the period January 2002 through March 2002 will be prepared and submitted to BRC.

We appreciate the opportunity to provide environmental consulting services on this project. Please do not hesitate to call if you have any questions or comments.

Sincerely yours,  
HALEY & ALDRICH, INC.

  
Richard M. Farson, PE  
Senior Engineer

  
Scott P. Zachary  
Project Manager

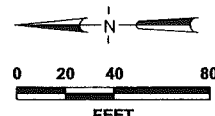
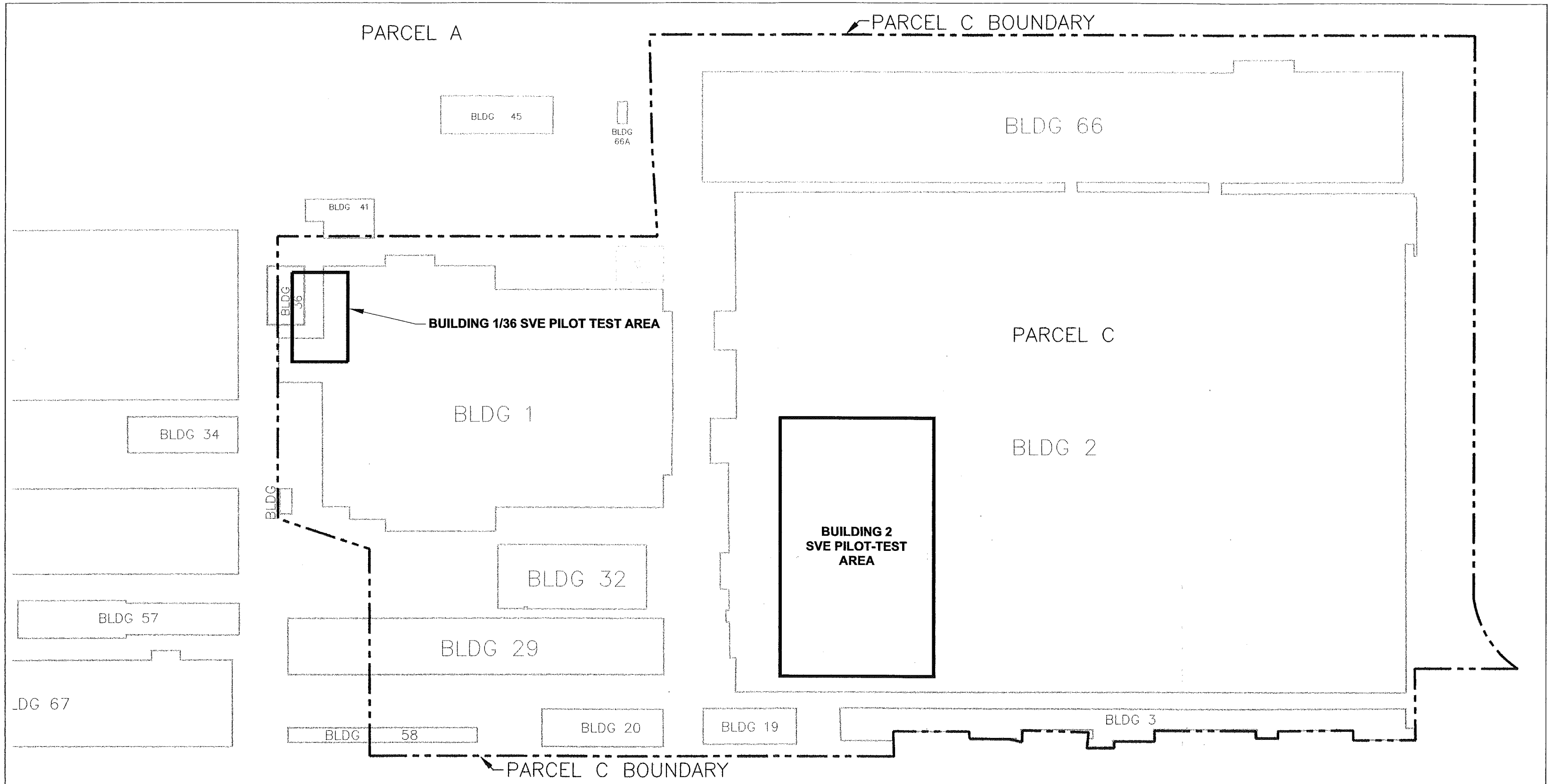


Enclosures:

Figure 1 – Pilot Test Locations  
Figure 2 – Building 1/36 SVE Pilot Test System  
Figure 3 – Building 2 SVE Pilot Test System  
Attachment 1 – Building 1/36 SVE Operational Data  
Attachment 2 – Building 2 SVE Operational Data

cc: John Scott, Boeing  
Scott Zachary, Haley & Aldrich  
Richard Farson, Haley & Aldrich  
File





ALL DIMENSIONS AND LOCATIONS APPROXIMATE

SOURCE OF BASEMAP: KENNEDY JENKS CONSULTANTS, 2000, SAMPLING AND ANALYSIS PLAN, BOEING REALTY CORPORATION'S C-6 FACILITY, PARCEL C, LOS ANGELES, CA, AUGUST 16, 2000.  
G:\PROJECTS\BOEING\C-6\AUTOCAD\SVE\THIRD & FOURTH QUATER 2001 REMEDIATION REPORT\Buildings 1 & 2 Combined\FIGURE 1 - PILOT TEST LOCATIONS.DWG

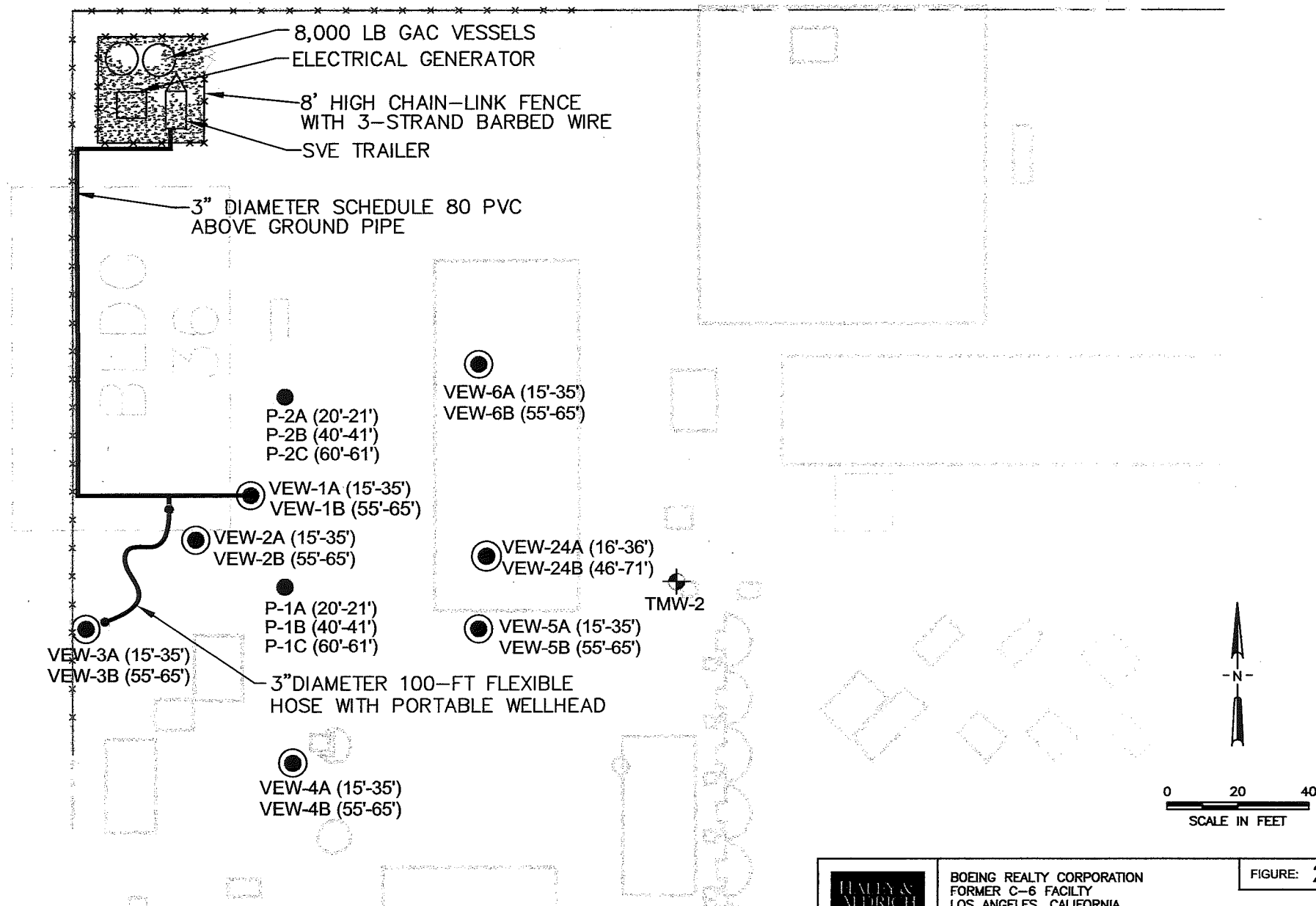


BOEING REALTY CORPORATION  
FORMER C-6 FACILITY  
LOS ANGELES, CALIFORNIA




**PILOT TEST LOCATIONS  
BUILDINGS 1 & 2**


FIGURE: 1

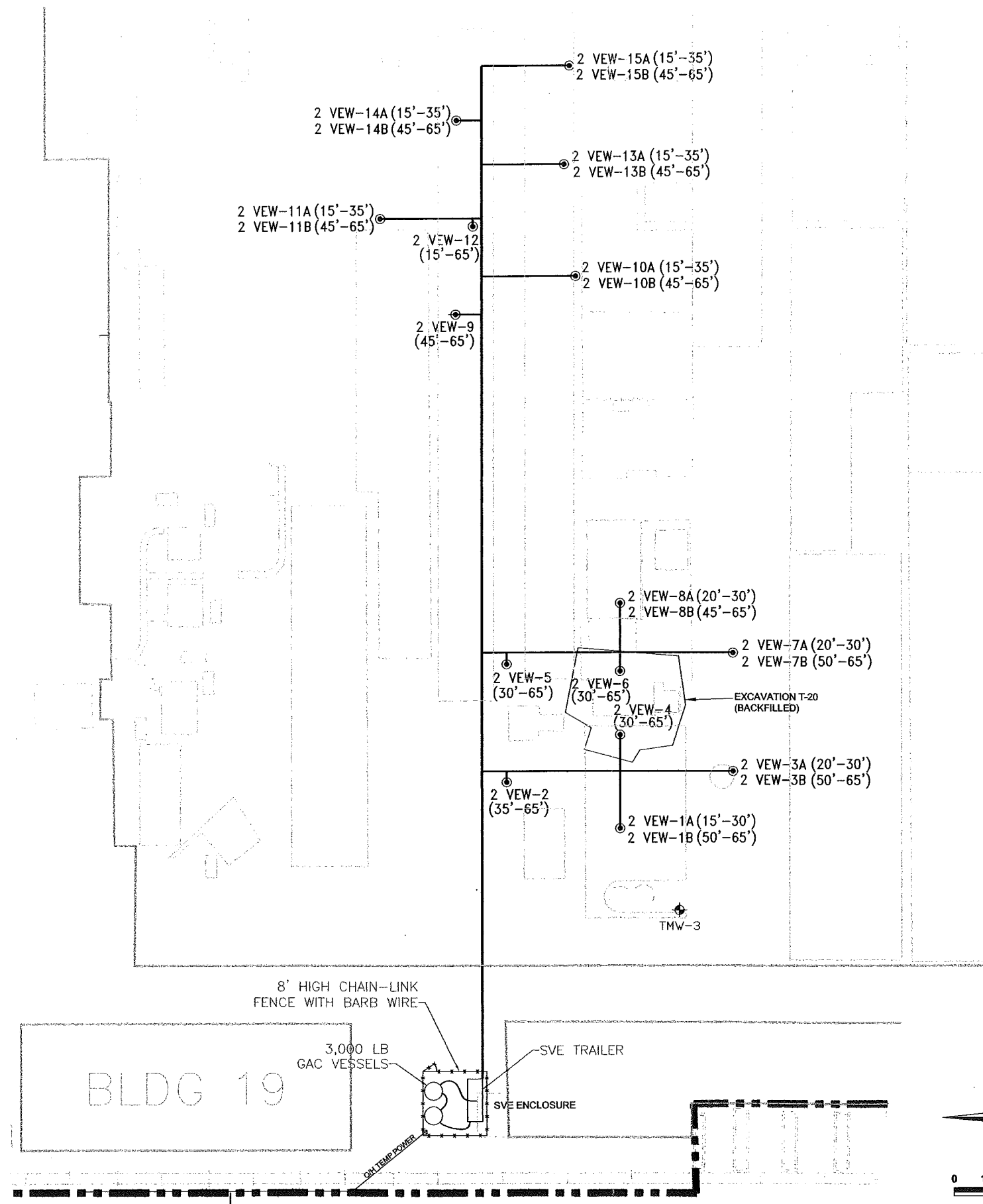
SCALE: AS SHOWN	QA/QC:	PROJECT: 27960-003 28335-003
DRAWN: SAL	REVIEWED: RMF	DATE: 28 JAN, 2002



# LEGEND

-  GROUNDWATER MONITOR WELL
-  VAPOR EXTRACTION WELL
-  VAPOR PROBE
- (20'-21') SCREEN INTERVALS (FEET BELOW GROUND SURFACE)

 UNDERGROUND ENGINEERING & ENVIRONMENTAL SOLUTIONS	BOEING REALTY CORPORATION FORMER C-6 FACILITY LOS ANGELES, CALIFORNIA		FIGURE: 2
	BUILDING 1/36 SVE PILOT TEST SYSTEM		
	SCALE: NTS	PROJECT: 27960-003 28335-003	
	DRAWN: SAL	REVIEWED: RMF	DATE: 16 JAN, 2002



- LEGEND**
- VAPOR EXTRACTION WELL
  - ⊕ GROUNDWATER MONITOR WELL
  - ABOVE-GROUND PIPING
  - (15'-30') SCREENED INTERVALS  
(FEET BELOW GROUND SURFACE)

**HALL & ALDRICH**  
 UNDERGROUND  
 ENGINEERING &  
 ENVIRONMENTAL  
 SOLUTIONS

BOEING REALTY CORPORATION  
 FORMER C-6 FACILITY  
 LOS ANGELES, CALIFORNIA

**BUILDING 2 SVE PILOT  
 TEST SYSTEM DIAGRAM**

FIGURE: 3

SCALE: AS SHOWN

PROJECT: 27960-003  
 28335-003

DRAWN: SAL

REVIEWED: RMF

DATE: 28 JAN, 2001

# ATTACHMENT 1

## BUILDING 1/36 SVE OPERATIONAL DATA

**TABLE 1 - BUILDING 1/36 TREATMENT SYSTEM INFLUENT LABORATORY DATA**

**Site Name:** BRC Former C-6 Facility  
**Location:** Torrance, California  
**System:** Building 1/36 SVE system

COMPOUND	SAMPLE DATE	9/11/2001	9/17/2001	9/24/2001	9/27/2001	9/28/2001	1/3/2002
	SAMPLE TYPE	Diluted Inlet	Diluted Inlet	Diluted Inlet	Diluted Inlet	Diluted Inlet	Diluted Inlet
		VEW3A_	VEW3B_	VEW3B_	VEW_5A_ DILUTED	VEW_2A_	DILUTED_
	LAB ID	DILUTED_ 091101	DILUTED_ 091701	DILUTED_ 092401	09/27/01	DILUTED 09/28/01	BLDG1_ 010302
1,1 Dichloroethene (ppbv)		180,000	160,000	210,000	260,000	28,000	32,000
Methylene chloride (ppbv)		ND	1,400	18,000	890	35,000	ND
1,1 Dichloroethane (ppbv)		1,900	3,300	11,000	6,400	8,600	14,000
2-Butanone (MEK) (ppbv)		ND	ND	ND	ND	9,200	ND
cis-1,2 Dichloroethene (ppbv)		3,800	5,750	7,500	1,700	3,300	290
1,1,1 Trichloroethane (ppbv)		3,500	28,000	180,000	52,000	310,000	34,000
Trichloroethene (ppbv)		46,000	48,000	56,000	100,000	41,000	12,000
Toluene (ppbv)		670	3,000	82,000	ND	1,200,000	1,800
Xylene (ppbv)		ND	3,500	6,700	ND	78,000	ND

Notes:

ppbv = parts per billion by volume

ND = Below method detection limits

**TABLE 2 - BUILDING 1/36 TREATMENT SYSTEM FIELD DATA**

**Site Name:** BRC Former C-6 Facility  
**Location:** Torrance, California  
**System:** Building 1/36 SVE system

DATE	HOUR METER	TIME	UNDILUTED FLOW RATE (1) (scfm)	UNDILUTED VACUUM (inches H <sub>2</sub> O)	DILUTED FLOW RATE (1) (scfm)	DILUTED INFLUENT PID (2) (ppmv)	MID PONT CARBON PID (2) (ppmv)	EFFLUENT CARBON PID (2) (ppmv)	COMMENTS
9/11/2001	954	14:23	26	53	90	370	0.2	0.1	
9/17/2001	1105	18:00	5	60	96	340	0.1	0.1	
9/24/2001	1206	15:00	12	59	93	880	0.1	0.1	
9/27/2001	1274	9:45	35	55	91	870	0.0	0.0	
9/28/2001	1299	11:00	14	77	32	>2000	0.0	0.0	
10/1/2001	1371	10:00	23	64	32	1170	0.0	0.0	System shut down, site grading and well replacement
12/13/2001	1399	15:00	7	54	200	1515	1.5	0.0	
12/20/2001	1483	14:15	6	47	200	800	430.0	0.0	System shut down, Carbon changeout
1/3/2002	1625	13:15	32	48	200	320	0.0	0.0	

**Notes:**

(1) Direct flow readings taken by hand-held TSI Veloci-calc Plus or orifice plate

(2) Measurements taken with a MiniRae 2000 PID calibrated to 100 ppmv Hexane or 100 ppmv Isobutylene, expressed as Hexane

scfm = standard cubic feet per minute

ppmv = parts per million by volume

NR = Not Recorded

> Greater than

**TABLE 3 - WELLFIELD DATA**

**Site Name:** BRC Former C-6 Facility  
**Location:** Torrance, California  
**System:** Building 1/36 SVE system

WELL ID	DATE	TIME	FLOW RATE	VACUUM	WELLHEAD PID	COMMENTS
			(scfm)	(inches H <sub>2</sub> O)	(ppmv)	
VEW-3A	9/11/2001	14:23	26	53	NA	
VEW-3B	9/17/2001	18:00	5	60	NA	
VEW-3B	9/24/2001	15:00	12	59	NA	
VEW-5A	9/27/2001	9:45	35	55	870	
VEW-6A	9/28/2001	11:00	14	77	NA	
VEW-5B	10/1/2001	10:00	23	64	NA	System shut down, site grading and well replacement
VEW-24B	12/13/2001	15:00	7	54	>10,000	New well, system restarted
VEW-24B	12/20/2001	14:15	6	47	>10,000	System shut down, Carbon changeout
VEW-24B	1/3/2002	13:15	32	48	NA	

**Notes:**

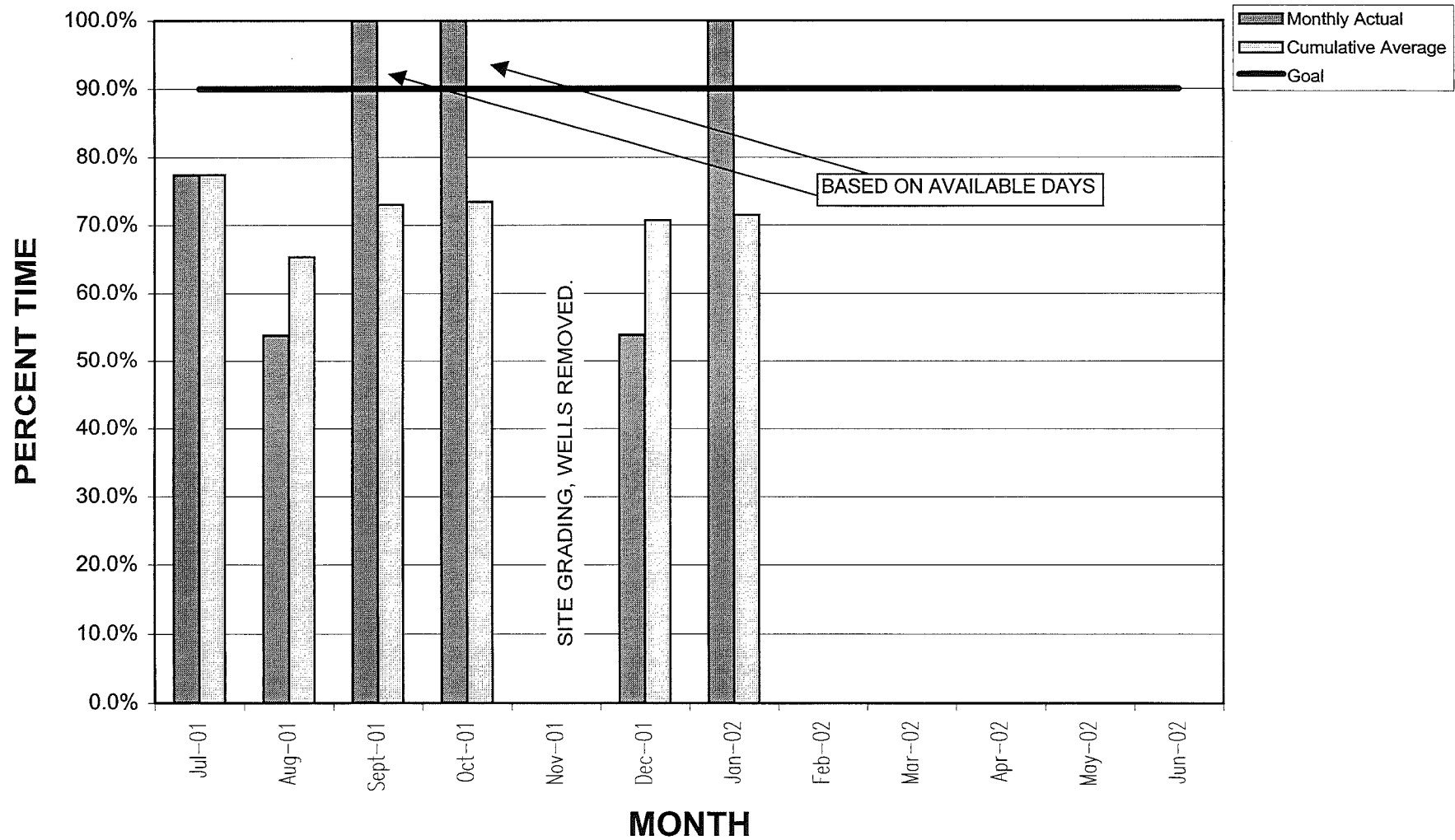
scfm = standard cubic feet per minute

ppmv = parts per million by volume

NA = Data not applicable or not recorded

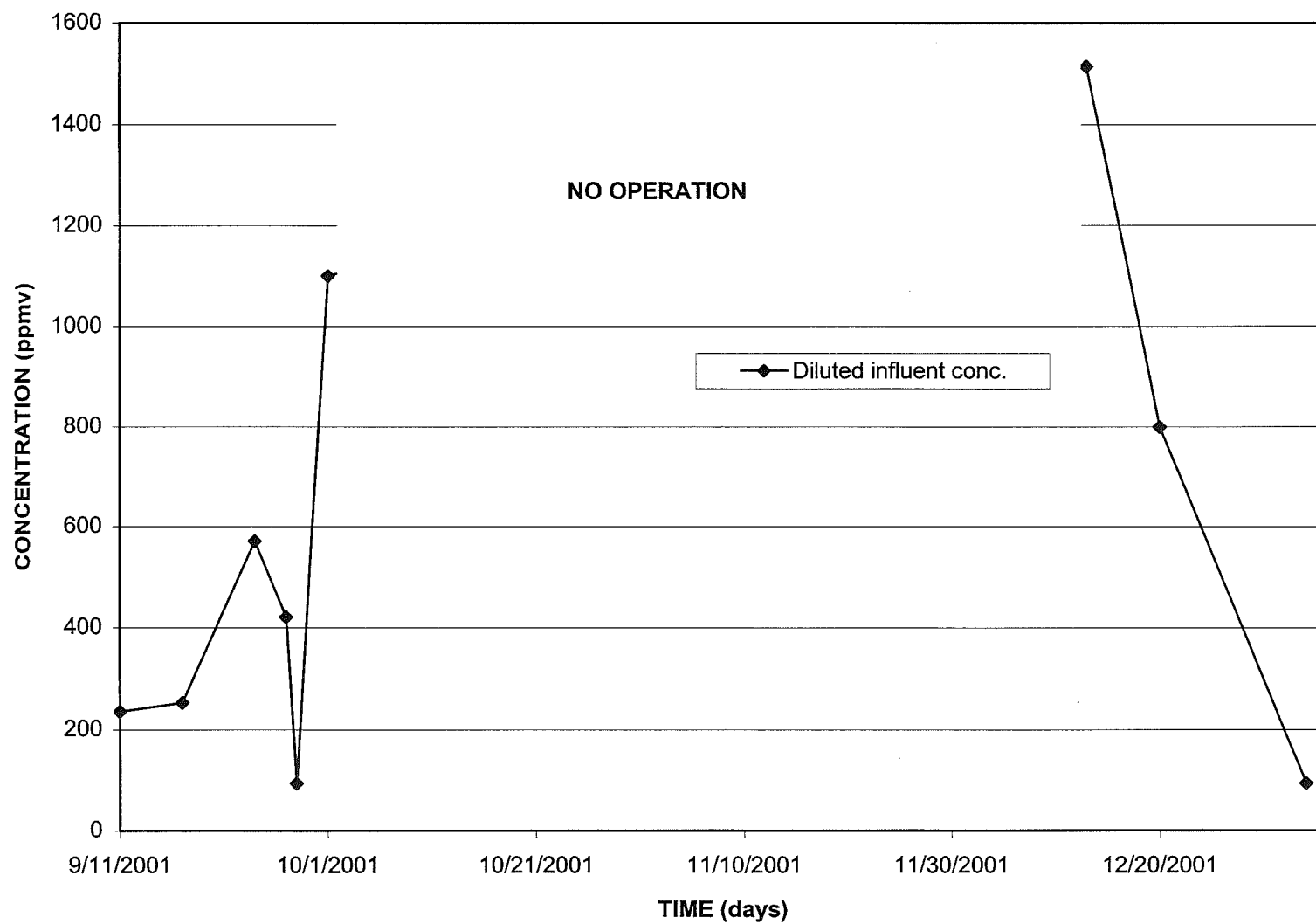
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**GRAPH 1**  
**BUILDING 1/36 MONTHLY PERCENT OPERATION**

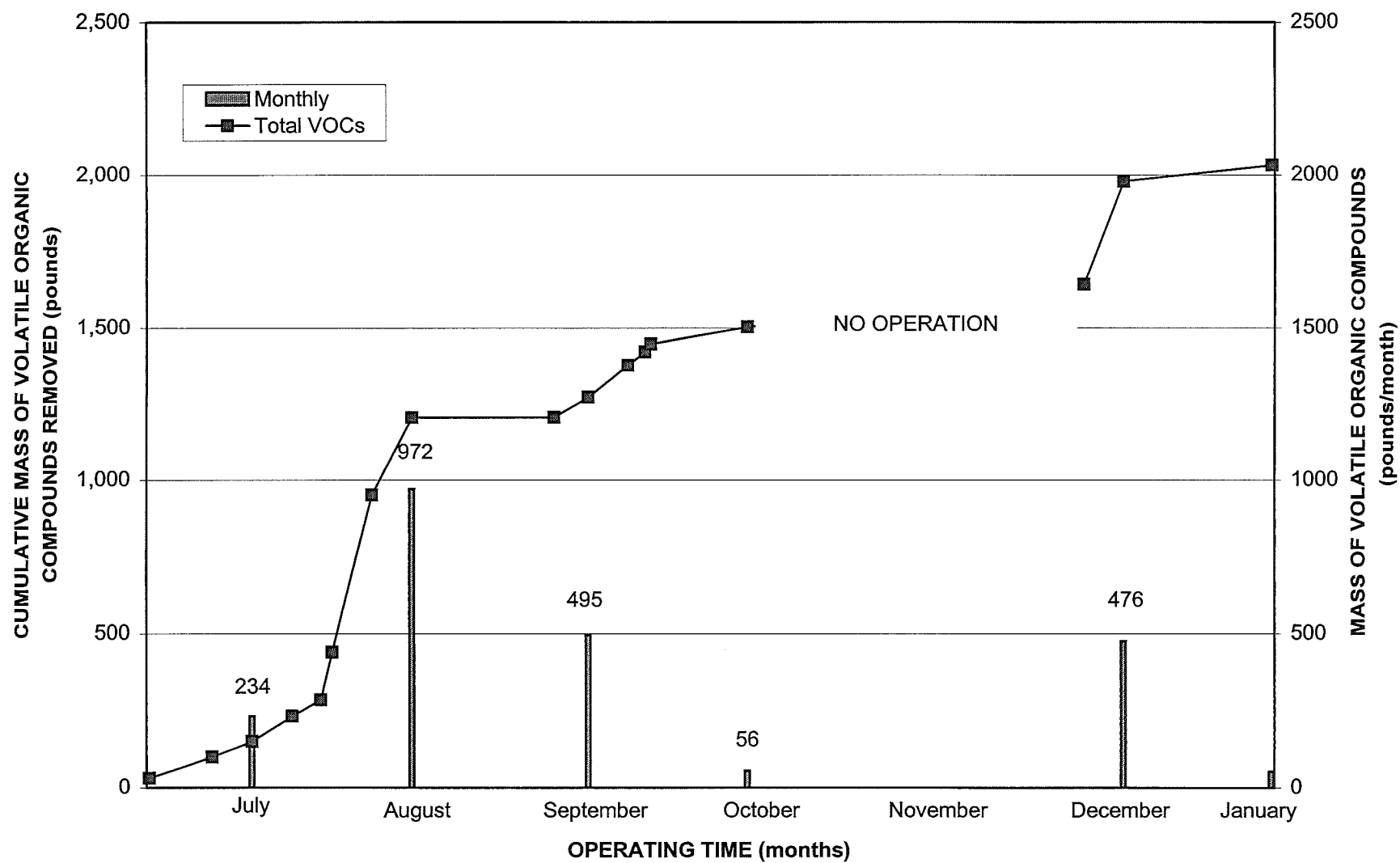




**GRAPH 2**  
**BUILDING 1/36 SVE SYSTEM TOTAL VOC INFLUENT CONCENTRATIONS**



**GRAPH 3**  
**BUILDING 1/36 CUMULATIVE VOLATILE ORGANIC COMPOUND MASS REMOVED**



## ATTACHMENT 2

### BUILDING 2 SVE OPERATIONAL DATA

**TABLE 1 - BUILDING 2 TREATMENT SYSTEM INFLUENT LABORATORY DATA**

**Site Name:** BRC Former C-6 Facility  
**Location:** Torrance, California  
**System:** Building 2 SVE system

COMPOUND	SAMPLE DATE	11/28/2001	11/30/2001	12/3/2001	12/4/2001	12/5/2001	12/6/2001	1/3/2002
	SAMPLE TYPE	Diluted Inlet	Diluted Inlet	Diluted Inlet	Diluted Inlet	Diluted Inlet	Diluted Inlet	Diluted Inlet
	LAB ID	DILUTED	DILUTED INLET_	DILUTED INLET_	DILUTED INLET_	DILUTED INLET_	DILUTED INLET_	DILUTED_INLET_
		INLET(11B, 14B)	VEW_11B,14B 11/30/01	VEW_11B,14B 12/3/01	VEW_11B,14B 12/4/01	VEW_11B,14B 12/5/02	VEW_11B,14B 12/6/03	BLDG_2_01/03/02
1,1 Dichloroethene (ppbv)		220	330	19	730	1,500	1,600	660
1,1,1 Trichloroethane (ppbv)		13	15	1	35	73	92	280
Trichloroethene (ppbv)		4,600	5,200	220	10,000	18,000	21,000	7,500
Tetrachloroethene (ppbv)		59	59	3	100	180	260	84
Trichlorofluoromethane (ppbv)		11	16	1	31	64	59	19

Notes:

ppbv = parts per billion by volume

# TABLE 2 - BUILDING 2 TREATMENT SYSTEM FIELD DATA

**Site Name:** BRC Former C-6 Facility  
**Location:** Torrance, California  
**System:** Building 2 SVE system

DATE	HOUR METER	TIME	UNDILUTED FLOW RATE (1) (scfm)	UNDILUTED VACUUM (inches H <sub>2</sub> O)	DILUTED FLOW RATE (1) (scfm)	DILUTED INFLUENT PID (2) (ppmv)	MID PONT CARBON PID (2) (ppmv)	EFFLUENT CARBON PID (2) (ppmv)	COMMENTS
11/28/2001	24	13:15	75	28	725	58	0.0	0.0	
11/30/2001	75	14:20	80	NR	750	60	3.6	2.0	
12/3/2001	76	17:10	85	NR	750	18	0.4	0.0	
12/4/2001	93	10:15	67	NR	750	98	3.0	0.0	
12/5/2001	123	16:30	68	NR	790	167	1.8	0.0	
12/6/2001	138	8:30	65	29	795	265	7.1	5.0	
12/7/2001	161	7:30	66	29.5	795	245	0.5	0.2	
12/8/2001	196	16:00	70	29	770	250	5.9	5.1	
12/9/2001	217	13:00	190	29.5	770	230	4.5	0.9	
12/10/2001	244	16:00	65	29.2	760	95	5.5	0.0	
12/11/2001	263	11:00	55	30.5	760	310	0.2	0.0	
12/12/2001	295	19:15	75	29.5	780	350	0.5	0.0	
12/13/2001	311	11:15	69	30	775	380	0.3	0.0	
12/20/2001	479	15:10	95	39	775	350	33.0	0.0	
12/28/2001	647	11:00	400	29	770	480	* 8.0	0.0	System shut down, Carbon changeout
1/3/2002	785	15:00	65	29	795	32	0.0	0.0	

**Notes:**

- (1) Direct flow readings taken by hand-held TSI Veloci-calc Plus or orifice plate
- (2) Measurements taken with a MiniRae 2000 PID calibrated to 100 ppmv Hexane, expressed as Hexane
- scfm = standard cubic feet per minute
- ppmv = parts per million by volume
- NR = Not Recorded
- \* = Not a representative sample

TABLE 3 - WELLFIELD DATA

Site Name: BRC Former C-6 Facility  
 Location: Torrance, California  
 System: Building 2 SVE system

WELL ID	DATE	TIME	FLOW RATE (scfm)	VACUUM (inches H <sub>2</sub> O)	WELLHEAD PID (ppmv)	COMMENTS
2-VEW-1A	11/27/2001	13:00	39	20	1200	Well Closed 11/28/01-1/2/02
	1/3/2002	15:00	NA	22	140	Well Opened
2-VEW-1B	11/27/2001	13:00	11	17	>10,000	Well Closed 11/28/01-1/2/02
	1/3/2002	15:00	NA	29	2800	Well Opened
2-VEW-2	11/27/2001	13:00	60	25	1300	Well Closed 11/28/01-1/2/02
	1/3/2002	15:00	70	20	740	Well Opened
2-VEW-3A	11/27/2001	13:00	20	20	710	Well Closed 11/28/01-1/2/02
	1/3/2002	15:00	12	22	160	Well Opened
2-VEW-3B	11/27/2001	13:00	11	25.0	2250	Initial Startup
	11/28/2001	13:15	NA	0.1	NA	Well Closed
	11/30/2001	14:20	NA	0.7	NA	"
	12/3/2001	17:10	NA	0.2	NA	"
	12/4/2001	10:15	NA	0.9	NA	"
	12/5/2001	16:30	NA	0.6	NA	"
	12/6/2001	8:30	NA	0.8	NA	"
	12/7/2001	7:30	NA	1.2	NA	"
	12/8/2001	16:00	NA	0.1	NA	"
	12/9/2001	13:00	NA	0.0	NA	"
	12/10/2001	16:00	NA	0.4	NA	"
	12/11/2001	11:00	NA	1.4	NA	"
	12/12/2001	19:15	8	29.5	1900	Well Opened
	12/13/2001	11:15	8	29.0	1675	"
	12/20/2001	15:10	17	39.0	1345	"
	12/28/2001	11:00	15	23.0	220	"
	1/3/2002	15:00	15	23.0	220	"
2-VEW-4	11/27/2001	13:00	30	25	1250	Well Closed 11/28/01-1/2/02
	1/3/2002	15:00	20	15	450	Well Opened
2-VEW-5	11/27/2001	13:00	90	25	1075	Well Closed 11/28/01-1/2/02
	1/3/2002	15:00	75	17	800	Well Opened
2-VEW-6	11/27/2001	13:00	52	25	>10,000	Well Closed 11/28/01-1/2/02
	1/3/2002	15:00	NA	15	625	Well Opened
2-VEW-7A	11/27/2001	13:00	13	25	360	Well Closed 11/28/01-1/2/02
	1/3/2002	15:00	75	20	100	Well Opened
2-VEW-7B	11/27/2001	13:00	60	25.0	600	Initial Startup
	11/28/2001	13:15	NA	0.3	NA	Well Closed
	11/30/2001	14:20	NA	0.9	NA	"
	12/3/2001	17:10	NA	0.2	NA	"
	12/4/2001	10:15	NA	1.2	NA	"
	12/5/2001	16:30	NA	0.8	NA	"
	12/6/2001	8:30	NA	1.0	NA	"
	12/7/2001	7:30	NA	1.4	NA	"
	12/8/2001	16:00	NA	0.1	NA	"
	12/9/2001	13:00	NA	0.0	NA	"
	12/10/2001	16:00	NA	0.5	NA	"
	12/11/2001	11:00	NA	1.6	NA	"
	12/12/2001	19:15	75	27.0	5450	Well Opened
	12/13/2001	11:15	85	29.0	4380	"
	12/20/2001	15:10	95	34.0	>10,000	"
	12/28/2001	11:00	75	20.0	100	"
	1/3/2002	15:00	75	20.0	100	"

**TABLE 3 - WELLFIELD DATA**

Site Name: BRC Former C-6 Facility  
 Location: Torrance, California  
 System: Building 2 SVE system

WELL ID	DATE	TIME	FLOW RATE (scfm)	VACUUM (inches H <sub>2</sub> O)	WELLHEAD PID (ppmv)	COMMENTS
2-VEW-8A	11/27/2001	13:00	14	25	1675	Well Closed 11/28/01-1/2/02
	1/3/2002	15:00	10	20	240	Well Opened
2-VEW-8B	11/27/2001	13:00	56	30	3750	Well Closed 11/28/01-1/2/02
	1/3/2002	15:00	50	20	990	Well Opened
2-VEW-9	11/27/2001	13:00	38	30	2550	Well Closed 11/28/01-1/2/02
	1/3/2002	15:00	75	19	390	Well Opened
2-VEW-10A	11/27/2001	13:00	20	30	1400	Well Closed 11/28/01-1/2/02
	1/3/2002	15:00	20	22	45	Well Opened
2-VEW-10B	11/27/2001	13:00	45	30	1620	Well Closed 11/28/01-1/2/02
	1/3/2002	15:00	32	18	700	Well Opened
2-VEW-11A	11/27/2001	13:00	27	25	1700	Well Closed 11/28/01-1/2/02
	1/3/2002	15:00	20	21	110	Well Opened
2-VEW-11B	11/27/2001	13:00	19	30.0	1040	Initial Startup
	11/28/2001	13:15	NA	27.5	3100	Well Opened
	11/30/2001	14:20	NA	27.0	NA	"
	12/3/2001	17:10	NA	26.5	NA	"
	12/4/2001	10:15	NA	27.5	1510	"
	12/5/2001	16:30	NA	29.0	3200	"
	12/6/2001	8:30	NA	28.8	3015	"
	12/7/2001	7:30	NA	29.0	3600	"
	12/8/2001	16:00	NA	29.0	3100	"
	12/9/2001	13:00	NA	27.0	NA	"
	12/10/2001	16:00	NA	28.5	4700	"
	12/11/2001	11:00	NA	30.0	4100	Well Closed
	12/12/2001	19:15	NA	2.1	NA	"
	12/13/2001	11:15	NA	0.9	NA	"
	12/20/2001	15:10	NA	1.7	NA	"
	12/28/2001	11:00	15	22.0	520	Well Opened
	1/3/2002	15:00	15	22.0	520	"
2-VEW-12	11/27/2001	13:00	82	30	2500	Well Closed 11/28/01-1/2/02
	1/3/2002	15:00	75	19	390	Well Opened
2-VEW-13A	11/27/2001	13:00	17	25	1700	Well Closed 11/28/01-1/2/02
	1/3/2002	15:00	10	23	95	Well Opened
2-VEW-13B	11/27/2001	13:00	40	25	1850	Well Closed 11/28/01-1/2/02
	1/3/2002	15:00	35	21	990	Well Opened
2-VEW-14A	11/27/2001	13:00	18	25	1300	Well Closed 11/28/01-1/2/02
	1/3/2002	15:00	19	23	390	Well Opened

### TABLE 3 - WELLFIELD DATA

**Site Name:** BRC Former C-6 Facility  
**Location:** Torrance, California  
**System:** Building 2 SVE system

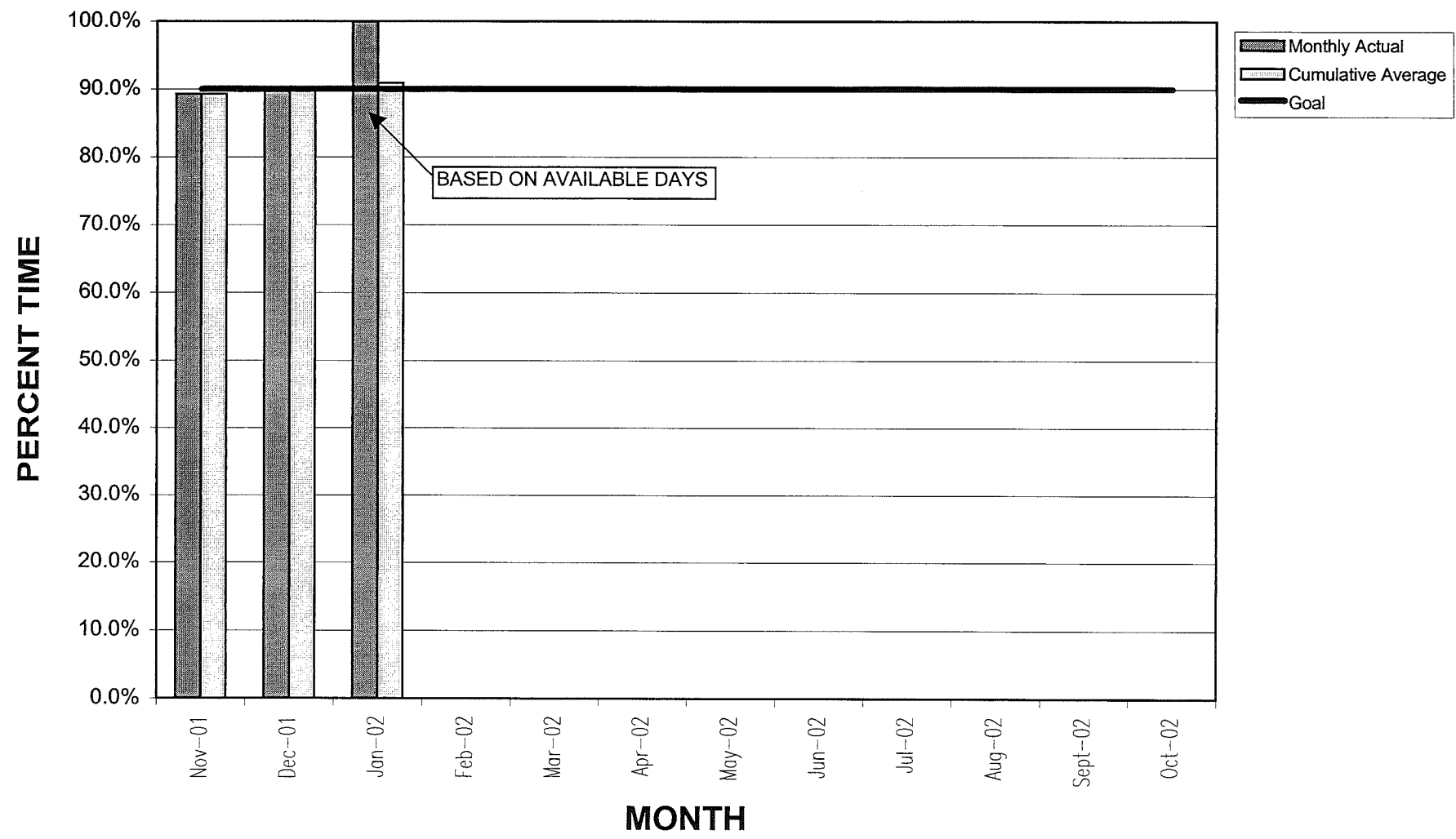
WELL ID	DATE	TIME	FLOW RATE (scfm)	VACUUM (inches H <sub>2</sub> O)	WELLHEAD PID (ppmv)	COMMENTS
2-VEW-14B	11/27/2001	13:00	33	25.0	1750	Initial Startup
	11/28/2001	13:15	NA	27.5	3000	Well Opened
	11/30/2001	14:20	NA	27.0	NA	"
	12/3/2001	17:10	NA	26.0	NA	"
	12/4/2001	10:15	NA	28.0	960	"
	12/5/2001	16:30	NA	28.0	2400	"
	12/6/2001	8:30	NA	28.2	2930	"
	12/7/2001	7:30	NA	29.5	3875	"
	12/8/2001	16:00	NA	29.0	2650	"
	12/9/2001	13:00	NA	24.0	NA	"
	12/10/2001	16:00	NA	28.0	4075	"
	12/11/2001	11:00	NA	30.0	3850	Well Closed
	12/12/2001	19:15	NA	1.9	NA	"
	12/13/2001	11:15	NA	0.8	NA	"
	12/20/2001	15:10	NA	1.6	NA	"
	12/28/2001	11:00	40	21.0	830	Well Opened
	1/3/2002	15:00	40	21.0	830	"
2-VEW-15A	11/27/2001	13:00	41	30	1170	Well Closed 11/28/01-1/2/02
	1/3/2002	15:00	23	18	67	Well Opened
2-VEW-15B	11/27/2001	13:00	22	25	1120	Well Closed 11/28/01-1/2/02
	1/3/2002	15:00	20	21	575	Well Opened

**Notes:**

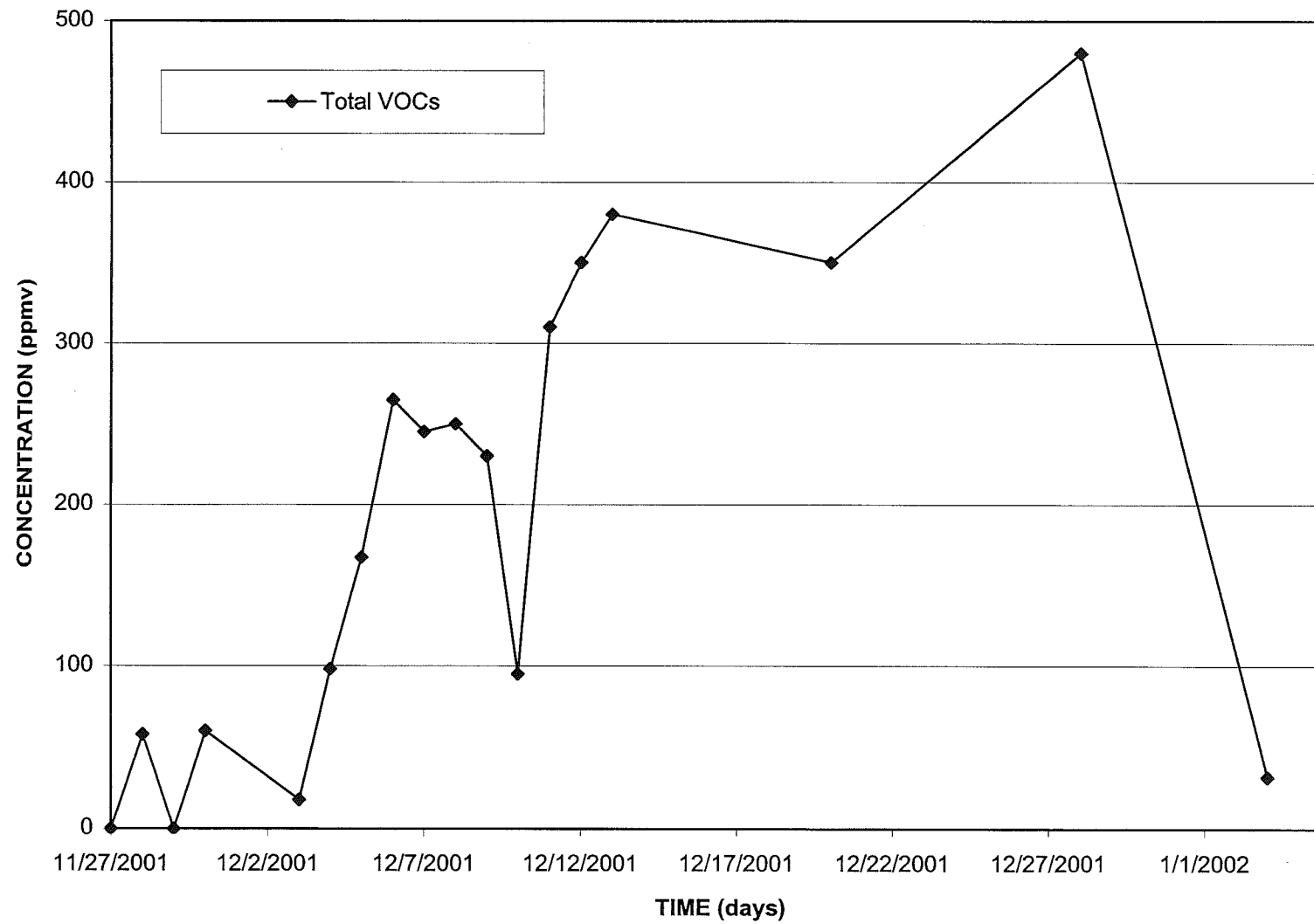
scfm = standard cubic feet per minute  
 ppmv = parts per million by volume  
 NA = Data not applicable or not recorded  
 > Greater than  
 NA = Data was not available or collected



**GRAPH 1**  
**BUILDING 2 MONTHLY PERCENT OPERATION**



**GRAPH 2**  
**BUILDING 2 SVE SYSTEM DILUTED INFLUENT CONCENTRATIONS**



**GRAPH 3**  
**BUILDING 2 CUMULATIVE VOLATILE ORGANIC COMPOUND MASS REMOVED**

